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ABSTRACT

An ultrastiff precision sonic bearing assembly and method thereof for controlling an effective coefficient of friction between two elements in slidable contact configured along an interface under a force sufficient to maintain contact and having static friction therebetween, by inducing a repetitive motion in one of the elements parallel to the interface thereby altering the effective coefficient of friction therebetween. The bearing assembly also provides for additional and independent electronic control over the average thickness thereof and senses the force thereon to allow the bearing assembly stiffness to be altered.